Kathy L. Lyons-Burke

Employment History

1998 – Present: The National Institute of Standards and Technology, Gaithersburg, MD
1994 - 1998: The MITRE Corporation, McLean, VA
1985 - 1994: GTE Government Systems Corporation, Rockville, MD
1983 - 1985: General Electric Company, Space Systems Division, Gaithersburg, MD
1983 - 1983: Energetics Incorporated, Columbia, MD
1982 - 1983: American Council on Education, Washington, DC
1979 - 1981: State University of New York, College of Environmental Science and Forestry, Syracuse, NY

Work Experience

1998 – Present: The National Institute of Standards and Technology (NIST)

Ms. Lyons-Burke is a Supervisory Computer Scientist in the Computer Security Division. She is currently the Director of NIST's new Computer Security Expert Assist Team (CSEAT). Ms. Lyons-Burke developed the CSEAT review methodology based on existing legislation, standards, and guidelines. CSEAT reviews are focused on improving the overall security of Federal IT systems. The initial CSEAT approach is two-fold and includes reviewing agency automated information security programs (computer security for the organization), and Office of Management and Budget (OMB) requested agency IT program security reviews for both existing and planned IT systems. Both of these result in development of best practices. Reviewing agency automated information security programs includes examining the organizational structure responsible for agency IT security; policies, procedures, and methodologies to establish/maintain IT system security; procedures used when vulnerabilities and attacks are identified; and interviewing personnel. Once the review is complete, the CSEAT develops a review report outlining deficiencies and recommending a course of action. The CSEAT delivers the report to the reviewed agency and develops a sanitized case report that can be used to develop guidelines. OMB requested agency IT program security reviews are performed when OMB notifies the CSEAT of a high-risk program. In this case, the CSEAT performs a program IT security review, and the CSEAT develops a review report outlining deficiencies and recommending a course of action. The CSEAT delivers the report to the reviewed agency and OMB and develops a sanitized case report that can be used to develop guidelines. Ms. Lyons-Burke and the CSEAT successfully completed a review of the Federal Emergency Management Agency (FEMA). FEMA told the NIST CSEAT that the review was more valuable than any other information security review received. The FEMA final report helped ensure a plan for protecting and ensuring continued operations of the critical emergency responder management network and the financial assistance networks prior to the September 11 terrorist attack. Ms. Lyons-Burke and the CSEAT are currently performing a high-risk program review on the Department of Interior's Indian Trust Management Program.

Ms. Lyons-Burke also served as the acting group manager for the Security Management and Guidance Group upon creation of the group. As the group manager for the Security Management and Guidance Group, Ms. Lyons-Burke was responsible for managing the group, including development of mission, vision, and goals statements and development of program and project plans, including financial plans and schedules. Ms. Lyons-Burke was also responsible for development of position descriptions, performance plans, and employee development, as well as employee performance assessments. Ms. Lyons-Burke's programmatic responsibilities included coordinating and leading the research and development of computer security policy and management guidance, coordinating and leading Computer Security Division outreach efforts, and directing the CSEAT.

Ms. Lyons-Burke's Computer Security Division outreach responsibilities included conducting Federal Computer Security Program Managers' Forum meetings and yearly offsite, conducting Federal Information Systems Security Educators' Association meetings and conferences, hosting computer security policy and management seminars, operating and maintaining a web resource for computer security information (Computer Security Resource Center), participating in National Security Telecommunications and Information Systems Security Committee (NSTISSC) subcommittee meetings, Federal CIO Council security subcommittee meetings, and conducting small and medium sized business regional computer security meetings. In addition, Ms. Lyons-Burke's outreach efforts include development of computer security brochures and ensuring that group personnel present computer security information at computer security conferences, seminars, and symposia across the country.

Ms. Lyons-Burke was responsible for establishing the Critical Information Infrastructure Protection (CIIP) Grants program and for development of the CIIP Grants implementation plan. The CIIP will fund research that focuses on development of solutions for critical information infrastructure protection not currently being developed by the private sector. The program will issue a Federal Register notice of the availability of funds and requesting public comments on the program. Each year, the key research areas will be narrowed down to reflect those areas most likely to provide the greatest impact on improving the protection of the critical information infrastructure. This program has an initial funding level of $5M.

Prior to her current assignment, Ms. Lyons-Burke was the supervisor for the Public Key Infrastructure (PKI) and applications program area of the Security Technology Group, which performs a variety of computer security tasks. She was also the PKI program manager and was responsible for assisting the Chief of the Computer Security Division in managing the division.

Ms. Lyons-Burke's assistance in managing the Computer Security Division included a variety of tasks. One of those tasks included responding to highly visible, quick turn-around requests for information from within NIST and from external sources. These requests are relevant to computer security across the nation and are frequently from Congress, the Department of Commerce, and Presidential advisors. In addition, Ms. Lyons-Burke is responsible for reviewing and commenting on computer security relevant testimony that is to be given by NIST, the Department of Commerce, and Presidential advisors. Other tasks include:

- Generating and commenting on draft congressional questions and answers (Q&As) relevant to computer security
- Developing, reviewing, and commenting on draft budget narratives relevant to computer security programs
- Providing suggested tasking for Computer Security Division efforts
- Reviewing and commenting on Computer Security Division documents
- Reviewing Computer Security Division activities
- Tracking Computer Security Division actions
- Developing procedures for the Computer Security Division
- Briefing the assessment panel on Computer Security Division activities
- Representing the Computer Security Division at meetings
- Responding to Information Technology Laboratory requests for information

As the supervisor for the Public Key Infrastructure (PKI) and applications program area of the Security Technology Group, Ms. Lyons-Burke was responsible for general supervision of the PKI team. This included development of position descriptions and performance plans and employee development, as well as employee performance assessments. As the PKI program manager, Ms. Lyons-Burke was responsible for managing all PKI projects in the Security Technology Group, including obtaining funding from other agencies for PKI efforts that fit within the mission of the Computer Security Division, and maintenance of cooperative research and development relationships. In addition, this position required overall program planning as well as individual project planning, scheduling, and financial management. The PKI projects included general PKI standards efforts, general PKI research efforts, general PKI support to other agencies, PKI related outreach activities, Federal PKI committee participation, the Internet PKI Prototype (IPP), Security Requirements for Certificate Issuing and Management Components, Common Signed Object Format, and Secure Multipurpose Internet Mail Extensions (S/MIME).

Ms. Lyons-Burke also worked directly for the Information Technology Laboratory office to lead a planning team for a new Institute for Information Infrastructure Protection to be established at NIST. The Institute was recommended by the President's Committee of Advisors on Science and Technology (PCAST) to fund, coordinate, and integrate research in critical infrastructure protection shortfall areas and transfer the results of this research to industry, government agencies, and other potential users. The Institute was included in the President's budget as well. Ms. Lyons-Burke developed the project plan for the Institute. She also drafted several papers describing the concept of operations for the Institute and worked with individuals from the Information Technology Laboratory to identify potential research topics for the Institute. In addition, Ms. Lyons-Burke conducted a brainstorming session with laboratory personnel to address how a large-scale testbed for IT information infrastructure protection should be developed and wrote a paper addressing NIST's view on development of a large-scale testbed for IT information infrastructure protection.

1994 –1998: The MITRE Corporation, McLean, VA

Ms. Lyons-Burke was a Principal Software/Systems Engineer and an Associate Department Head in the Special Projects Department of the National Intelligence Division of the Center for Integrated Intelligence Systems. The Special Projects Department performs a wide variety of classified systems engineering tasks for the Intelligence Community. As Associate Department Head, Ms. Lyons-Burke was responsible for assisting the Department Head in day-to-day operations of the department, including management oversight of all Department programs and staff and financial planning to ensure coverage for all staff members. Ms. Lyons-Burke also acted as Department Head when the Department Head was absent. The department had 30 staff members, and supported a diverse range of technical programs for the Central Intelligence Agency related to communications planning, information technology, systems architectures, task force leadership and coordination, and strategic planning.

In addition to her general departmental supervision responsibilities, Ms. Lyons-Burke was the Program Manager for the Environmental Intelligence and Applications Program (EIAP) and was responsible for 13 technical staff (most of whom were in other departments) and financial planning for a budget of close to $4M per year. EIAP was a large program that included security, engineering, scientific, information technology, and programmatic support to the Director of Central Intelligence (DCI) Environmental Center (DEC). As the program manager, Ms. Lyons-Burke was responsible for program planning, technical oversight

of program tasks, and overall management and coordination of the EIAP. She was responsible for establishing multiple laboratories to enable evaluation of existing software technologies for application to the program requirements. Product evaluations were forward looking as well as ensuring that immediate program requirements were satisfied. Some of the product types evaluated include collaborative tools, imagery indexing and manipulation tools, HTML and HTTP based tools, and various database and querying capabilities.

Ms. Lyons-Burke was also responsible for project management of several other classified projects that included:

- environmental policy issues
- development of information technology systems for collaboration within communities of interest, where access to information was restricted based upon security classification compartments
- information technology solutions to perform open source analysis
- imagery declassification
- business process reengineering
- systems engineering
- business planning

Ms. Lyons-Burke's technical responsibilities on these projects have included deployment of information technology collaborative toolsets, task force coordination, information technology prototyping efforts geared toward seeding performance improvement changes within the Intelligence Community, and information technology contract acquisition support.

Job titles of employees supervised (actual line manager): Network and distributed systems engineers, information systems engineers, environmental engineer, financial analysts, program coordinators, secretaries

1985 - 1994: GTE Government Systems Corporation, Rockville, MD

As a Senior Member of the Technical Staff, Ms. Lyons-Burke obtained extensive experience in the field of trusted computer systems that follow Department of Defense Orange Book secure systems criteria, systems software engineering, scientific programming, performance analysis, and software project management. She is experienced in Yourdon structured analysis and design methodology for information technology systems. Ms. Lyons-Burke has a broad systems background supporting scientific analysis, communications processing, and structured system development from program planning and requirements definition through installation, integration, and user training. Ms. Lyons-Burke has excellent communication skills and has been responsible for full life cycle program management, information technology software development, and documentation including requirements specifications, design specifications, and other system documentation. She has focused on optimization of secure system level processing and secure communications throughput on several programs.

Ms. Lyons-Burke served as the software development manager for an imagery program that followed Department of Defense information processing standards from 1993 to 1994. The development effort included program planning, financial planning, and implementation for system level modifications to a secure imagery system to support new interfaces to other national information technology systems. Her responsibilities included oversight of the requirements definition and preliminary design, ensuring the accuracy and completeness of deliverable items, resolving requirements and design issues with the customer, conducting formal program reviews, ensuring the program was within cost and schedule, and all associated tasking for the software development program.

Between project assignments, Ms. Lyons-Burke wrote the software development plan for the MAGIC program, which was a precursor to Intelink, the classified Internet. This software development plan utilized the rapid evolutionary development approach.

From 1986 through 1992, Ms. Lyons-Burke held multiple positions of increasing technical and managerial responsibility in the development of the communications interface of a large B2 security level transcription system (MINSTREL) leading to a successful early delivery to the customer site. This effort included the utilization of the DDCMP, FTP, and TCP/IP protocols, as well as generation of applications software to manipulate voice data and communicate with other systems and subsystems in a secure fashion. Ms. Lyons-Burke also provided the technical interface with the customer to resolve requirements and design issues, and provided formal presentations related to the effort.

Ms. Lyons-Burke was the technical program manager for the site integration of the external interface subsystems that constituted the first incremental delivery of the MINSTREL system. Her responsibilities included ensuring that the interface subsystem hardware and software met program requirements and properly interfaced with client system software. This effort resulted in the successful early delivery of the subsystems to the customer site.

Prior to this, Ms. Lyons-Burke was the Program Manager for the Voice Interface (VI) subsystem and the Network Communications System Interface (NCSI) subsystem on the MINSTREL program. Her responsibilities included program planning, financial planning, and directing the subsystem development efforts from requirements specification and logical modeling through implementation while utilizing structured analysis and design techniques to provide a secure B2 system. As part of this effort, Ms. Lyons-Burke was responsible for resolving requirements and design issues with the customer, formally presenting program progress at major milestones, prototyping alternative designs, evaluating design prototypes, providing technical leadership for the subsystem teams, tasking the subsystem team leads and members, evaluating subsystem team members, cost account management, and ensuring the effort completion within cost and schedule.

From 1985 to 1986, Ms. Lyons-Burke was a member of the GTE software tools group. She was project manager for the Technical Performance Measurement System (TPMS) and led a small team in the software development of the system. TPMS evaluated system performance against requirements for such parameters as space/sizing requirements, disk usage, and I/O throughput. She also performed the initial requirements specification and logical modeling for the in-house portion of a configuration management tool to be used to support a large DoD software development effort.

1983 - 1985: General Electric Company, Space Systems Division, Gaithersburg, MD

As a Computer Programmer/Analyst, Ms. Lyons-Burke held primary responsibility for the software development of the Planned Document Distribution component of the GAO contract. This responsibility included utilizing detailed design and structured techniques to provide and maintain enhancements to existing software as new requirements were identified, analysis of the existing system, recommending proposed changes and identifying the impact on the entire system, and recommending improvements in the accuracy and efficiency of the system. Ms. Lyons-Burke was also responsible for maintaining the integrity of all GAO databases while performing all updates, design modifications, and regenerations.

1983 - 1983: Energetics, Inc., Columbia, MD

As a Computer Programmer, Ms. Lyons-Burke performed a study to determine the feasibility of utilizing Artificial Intelligence to save energy in a paper mill. In addition, she provided support to the Department of Energy's Office of Industrial Programs in the evaluation and ranking of research and development projects aimed at energy conservation in the industrial sector, and upgraded the Threshold Analysis Model (TAM) used for the determination of energy savings and economic effectiveness of industrial energy conservation projects. Ms. Lyons-Burke was also responsible for company computer operations, including the selection, installation, and operation of an in-house microcomputer system, and the implementation of communication links between the company and various data processing systems at the Department of Energy.

1982 - 1983: American Council on Education, Washington, DC

As a Research Assistant/Programmer, Ms. Lyons-Burke was responsible for the education financial aid database and the freshman survey database. This responsibility included writing software for all statistical analyses and data presentation for the purpose of congressional lobbying as well as the maintenance and updating of financial aid data tapes. Ms. Lyons-Burke also performed statistical analyses and provided for the presentation of the Higher Education Panel Surveys and a longitudinal survey on persisters and defectors in the health professions.

1979 - 1981: State University of New York, College of Environmental Science and Forestry, Syracuse, NY

As a Research Assistant, Ms. Lyons-Burke directed a field crew that laid out long-term study sites and collected vegetative and animal movement data. Some of the data collection efforts included cover mapping research areas, vegetative sampling of cover types, snow track counts of various species, ruffed grouse drumming site counts and brood counts, woodcock singing site survey, capturing, banding, and fitting ruffed grouse with radio transmitters, obtaining radio telemetry locations, snowshoe hare and deer browse and pellet counts, insect sampling, and developing computer programs for analysis of the data. Ms. Lyons-Burke performed multivariate statistical analyses to determine the relationship of habitat characteristics to specific wildlife species as part of a long-term habitat manipulation study.

Professional Honors

NIST Leave Award for establishing the Computer Security Expert Assist Team, 2001

NIST Cash in a Flash Award for establishing the Critical Infrastructure Protection Grants Program, 2001

NIST Cash in a Flash Award for leading the Institute for Information Infrastructure Protection effort, 2000

MITRE Special Recognition Award for outstanding management and technical support to the Environmental Intelligence and Applications Program, 1996

GTE Superior Performance Award for outstanding contribution to the CATIS effort, 1994

GTE Superior Performance Award for outstanding contribution in the successful early delivery of the MINSTREL system external interface subsystems, 1992

Outstanding effort Thank You letter for successfully completing acceptance testing on the early delivery of the MINSTREL system external interface subsystems on time and within schedule from NSA, 1992

GTE Superior Performance Award for outstanding contribution in the completion of the NCSI Subsystem implementation, 1990

Outstanding effort Thank You letter for completing CPC testing on time and within schedule from NSA, 1990

GTE Superior Performance Award for outstanding contribution in the completion of the VI Subsystem implementation, 1989

Outstanding contribution Thank You letter for contribution to proposal technical volume from GTE, 1988

Ralph T. King Award for Outstanding Senior in the Wildlife Program, 1979

Who's Who Among Students in American Universities and Colleges, 1979

Education

MS, Computer Science, The Johns Hopkins University, 1987
MS, Environmental and Forest Biology, concentration in Wildlife Biology, State University of New York, College of Environmental Science and Forestry, 1981
BS, Environmental and Forest Biology, cum laude, concentration in Wildlife Biology and Botany, State University of New York, College of Environmental Science and Forestry, 1979

Professional Courses

Fiscal/Financial Management, 2001
Incentive Awards Program, 2001
NIST Civil Rights Program, 2001
Pay Administration/Classification, 2001
Services Provided by Management & Organization Division, 2001
Training Program/Retirement/Benefits, 2001
Effective Communication, 2000
Position Classification for Managers, 2000
Performance Plan Training for Supervisors, 2000
Dealing with Differences, 1999
Classifying Positions at NIST, 1999
Computer Security, 1999
EEO Fundamentals for Supervisors and Managers, 1999
Employee Assistance Program, 1999
Health and Safety Responsibilities, 1999
Performance Management, 1999
Procurement/Supply, 1999
Securing E-commerce with Digital Certificates and PKI, SecureIT, 1998
Improving Processes and the Maps that Deliver Results, Rummler-Brache Performance Institute, 1998
Building Information Security Protection Profiles, MITRE Institute, 1998
MITRE Management Development Program, MITRE Institute, 1996-1997
JAVA Development Camp, Sunsoft, 1996
Team Building Workshop, 1991
Software Project Management, University of Maryland Seminar Series, 1990
Vax System Manager, DEC, 1989
Detailed Design Using Ada, GTE, 1987
VAX Internals I & II, DEC, 1987
Management Control System, GTE, 1986
Structured Design for Real-Time Systems, Yourdon, 1986
Ada, GTE, 1986
Change and Configuration Control (CCC), Softool, 1986

Utilizing VAX/VMS Services Using Ada, Essential Resources Inc., 1986
Software Engineering with Ada, ISI, 1986
Structured Analysis, Yourdon, 1986
DRS Data Base Administration, Advanced Data Management, 1985

Technical Publications

Lyons-Burke, K. and Bowen, P. *Federal Emergency Management Agency CSEAT Security Program Review Final Report*, October 2001

Lyons-Burke, K. and Federal Public Key Infrastructure Steering Committee, *NIST Special Publication 800-25 Federal Agency Use of Public Key Technology for Digital Signatures and Authentication*, October 2000

Burr, W. E. and Lyons-Burke, K., *Public Key Infrastructures for the Financial Services Industry,* The Future of Financial Services - Winning in the Age of Technology, Spring 2000

Lyons-Burke, K and Hastings, N., *FMS/NIST Internet PKI Prototype Final Report*, December 1999

Lyons-Burke, K and Nazario, N., *FMS/NIST Internet PKI Prototype Design Document*, July 1999

Lyons, K., *Ruffed Grouse Brood Ranges and Habitat Preferences*, Masters Thesis, September 1981

Lyons, K. and Chambers, R., *Use of a Chick Distress Call to Capture Ruffed Grouse Hens*, Proceedings of the Northeast Fish and Wildlife Conference, Spring 1981

Additional publications are classified.